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System76 Thelio AMD Ryzen 9 5900X 24, x250-kernel, devone-kernel

Docker testing on Ubuntu 20.04.4 LTS via the Phoronix Test Suite.

Test Systems:

AMD Ryzen 9 5900X 24

Processor: AMD Ryzen 9 5900X 12-Core @ 3.70GHz (12 Cores / 24 Threads), Motherboard: System76 Thelio (F36c Z5 BIOS), Memory: 32GB, Disk: 1000GB Samsung SSD 980 PRO 1TB + 1000GB PNY CS900 1TB SS, Graphics: EFI VGA

OS: Ubuntu 20.04.4 LTS, Kernel: 5.19.8 (x86_64), Display Driver: NVIDIA, Compiler: GCC 9.4.0, File-System: btrfs, Screen Resolution: 1280x1024, System Layer: Docker

Kernel Notes: Transparent Huge Pages: madvise
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale-gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,gm2 --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-9-Av3uEd/gcc-9-9.4.0/debian/tmp-nvptx/usr,hsa --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib=auto --with-tune=generic --without-cuda-driver -v
Processor Notes: Scaling Governor: acpi-cpufreq performance (Boost: Enabled) - CPU Microcode: 0xa20120a

Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + mmio_stale_data: Not affected + retbleed: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Retpolines IBPB: conditional IBRS_FW STIBP: always-on RSB filling PBRSB-elBRS: Not affected + srbd: Not affected + tsx_async_abort: Not affected

x250 with stock configuration Kernel test

Processor: Intel Core i7-5600U @ 3.20GHz (2 Cores / 4 Threads), Motherboard: LENOVO 20CM0048US (N10ET53W 1.32 BIOS), Memory: 16GB, Disk: 250GB Samsung SSD 860, Graphics: i915drmfb (950MHz)

OS: Ubuntu 20.04.4 LTS, Kernel: 5.19.8-200.fc36.x86_64 (x86_64), Compiler: GCC 9.4.0, File-System: btrfs, Screen Resolution: 1920x1080, System Layer: docker

Kernel Notes: Transparent Huge Pages: madvise
 Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,gm2 --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-9-Av3uEd/gcc-9-9.4.0/debian/tmp-nvptx/usr.hsa --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib=auto --with-tune=generic --without-cuda-driver -v
 Processor Notes: Scaling Governor: intel_cpufreq schedutil - CPU Microcode: 0x2f
 Security Notes: itlb_multihit: KVM: Mitigation of VMX disabled + l1tf: Mitigation of PTE Inversion; VMX: conditional cache flushes SMT vulnerable + mds: Mitigation of Clear buffers; SMT vulnerable + meltdown: Mitigation of PTI + mmio_stale_data: Unknown: No mitigations + retbleed: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Retpolines IBPB: conditional IBRS_FW STIBP: conditional RSB filling PBRSB-elBRS: Not affected + srbd: Mitigation of Microcode + tsx_async_abort: Mitigation of Clear buffers; SMT vulnerable

Dev One with stock configuration Kernel test

Processor: AMD Ryzen 7 PRO 5850U @ 4.51GHz (8 Cores / 16 Threads), Motherboard: HP 8A78 (F.04 BIOS), Memory: 16GB, Disk: 1024GB SK hynix PC711 HFS001TDE9X073N, Graphics: amdgpudrmfb (2000/400MHz)

OS: Ubuntu 20.04.4 LTS, Kernel: 5.19.0-76051900-generic (x86_64), Compiler: GCC 9.4.0, File-System: overlayfs, Screen Resolution: 1920x1080, System Layer: Docker

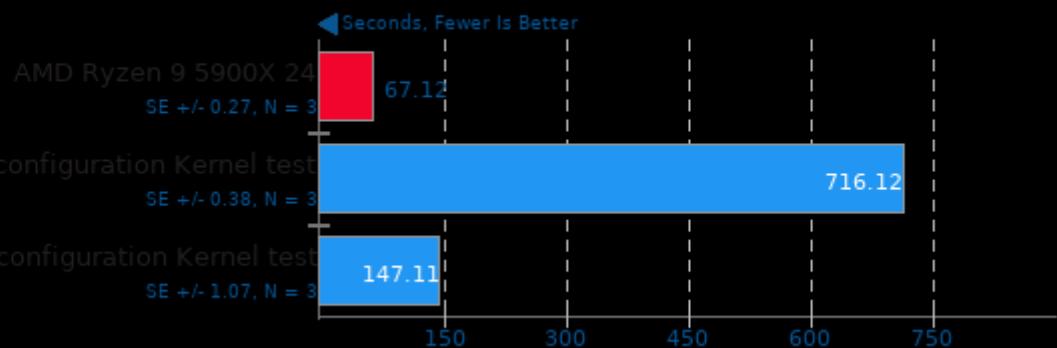
Kernel Notes: Transparent Huge Pages: madvise
 Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,gm2 --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-9-Av3uEd/gcc-9-9.4.0/debian/tmp-nvptx/usr.hsa --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib=auto --with-tune=generic --without-cuda-driver -v
 Processor Notes: Scaling Governor: amd-pstate schedutil (Boost: Enabled) - CPU Microcode: 0xa50000c
 Disk Scheduler Notes: KYBER
 Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + mmio_stale_data: Not affected + retbleed: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Retpolines IBPB: conditional IBRS_FW STIBP: always-on RSB filling + srbd: Not affected + tsx_async_abort: Not affected

	AMD Ryzen 9 5900X 24	x250 with stock configuration Kernel test	Dev One with stock configuration Kernel test
Timed Linux Kernel Compilation - defconfig (sec)	67.124	716.121	147.107
Normalized	100%	9.37%	45.63%
Standard Deviation	0.7%	0.1%	1.3%
LevelDB - Hot Read (us/Op)			5.515
Standard Deviation			2.4%
LevelDB - Fill Sync (MB/s)			1.6
Standard Deviation			0%
LevelDB - Fill Sync (us/Op)			1128

Standard Deviation	0.6%
LevelDB - Overwrite (MB/s)	47.2
Standard Deviation	1%
LevelDB - Overwrite (us/Op)	37.482
Standard Deviation	1%
LevelDB - Rand Fill (MB/s)	48.0
Standard Deviation	0.6%
LevelDB - Rand Fill (us/Op)	36.818
Standard Deviation	0.6%
LevelDB - Rand Read (us/Op)	5.427
Standard Deviation	0.9%
LevelDB - Seek Rand (us/Op)	7.773
Standard Deviation	1%
LevelDB - Rand Delete (us/Op)	35.744
Standard Deviation	0.4%
LevelDB - Seq Fill (MB/s)	49.3
Standard Deviation	0.9%
LevelDB - Seq Fill (us/Op)	35.914
Standard Deviation	0.9%
PostMark - D.T.P (TPS)	5102

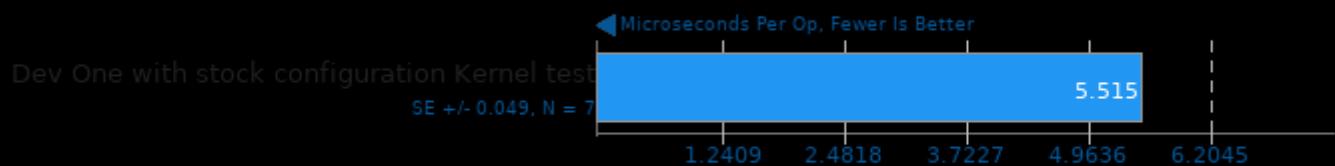
Timed Linux Kernel Compilation 5.18

Build: defconfig



LevelDB 1.22

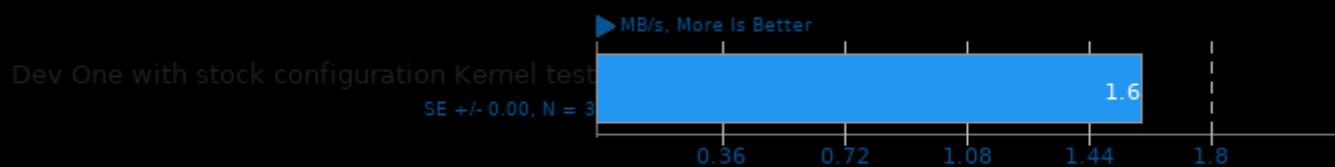
Benchmark: Hot Read



1. (CXX) g++ options: -O3 -lsnappy -lpthread

LevelDB 1.22

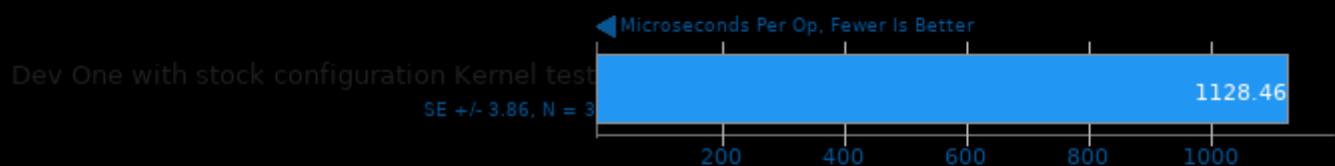
Benchmark: Fill Sync



1. (CXX) g++ options: -O3 -lsnappy -lpthread

LevelDB 1.22

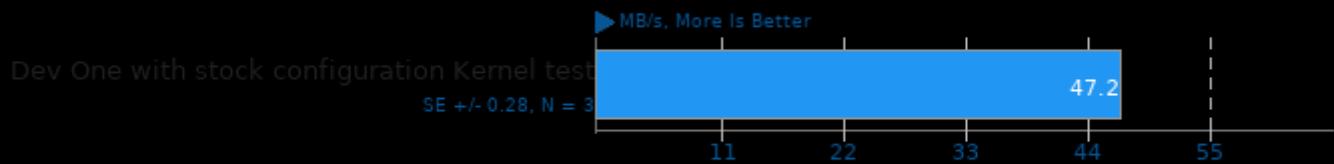
Benchmark: Fill Sync



1. (CXX) g++ options: -O3 -lsnappy -lpthread

LevelDB 1.22

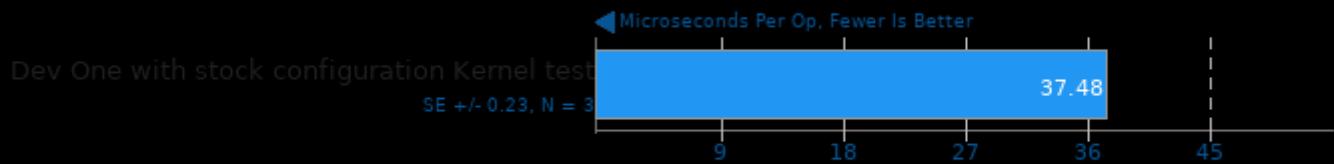
Benchmark: Overwrite



1. (CXX) g++ options: -O3 -lsnappy -lpthread

LevelDB 1.22

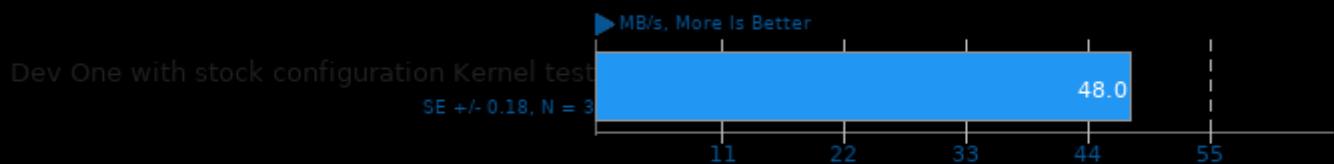
Benchmark: Overwrite



1. (CXX) g++ options: -O3 -lsnappy -lpthread

LevelDB 1.22

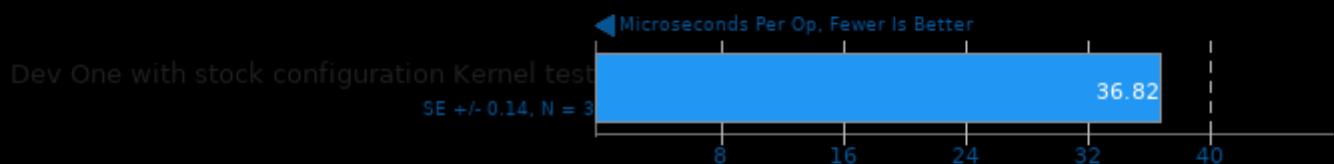
Benchmark: Random Fill



1. (CXX) g++ options: -O3 -lsnappy -lpthread

LevelDB 1.22

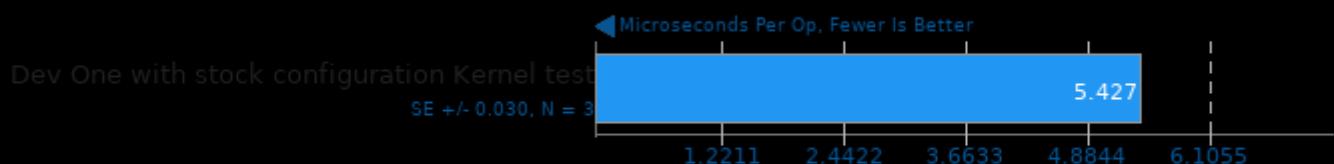
Benchmark: Random Fill



1. (CXX) g++ options: -O3 -lsnappy -lpthread

LevelDB 1.22

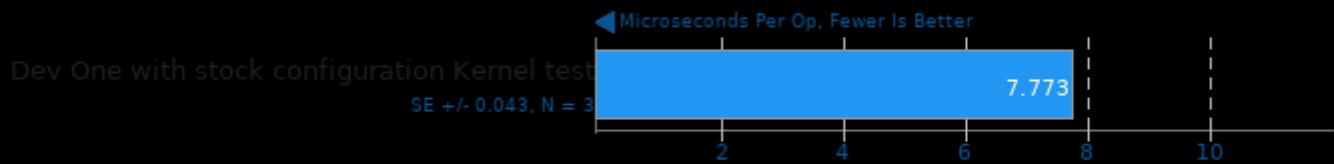
Benchmark: Random Read



1. (CXX) g++ options: -O3 -lsnappy -lpthread

LevelDB 1.22

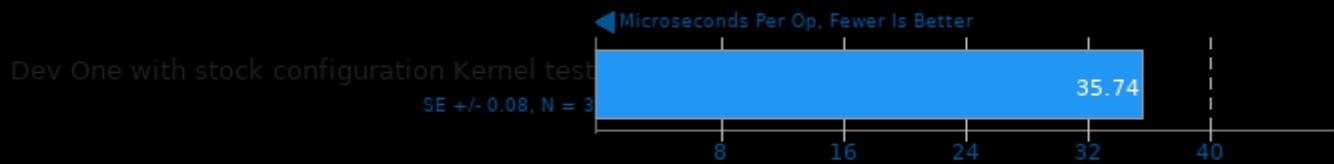
Benchmark: Seek Random



1. (CXX) g++ options: -O3 -lsnappy -lpthread

LevelDB 1.22

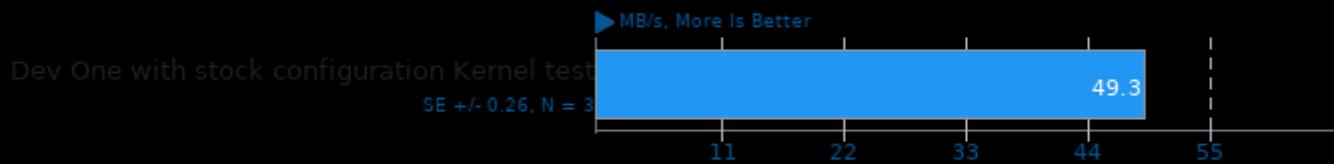
Benchmark: Random Delete



1. (CXX) g++ options: -O3 -lsnappy -lpthread

LevelDB 1.22

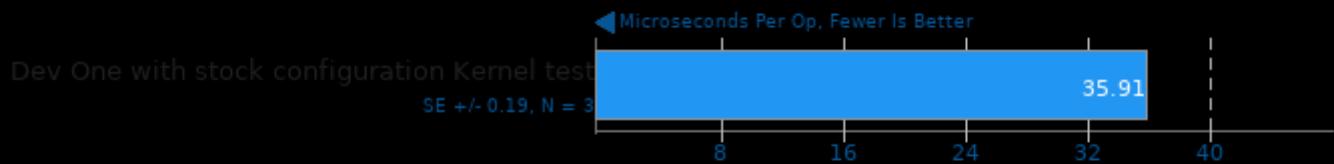
Benchmark: Sequential Fill



1. (CXX) g++ options: -O3 -lsnappy -lpthread

LevelDB 1.22

Benchmark: Sequential Fill



1. (CXX) g++ options: -O3 -lsnappy -lpthread

PostMark 1.51

Disk Transaction Performance



1. (CC) gcc options: -O3

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